| | | | | · | | | | SHI | <u> </u> | or <u>7</u> |
|------|-----------------------|------------|---------------------|---------------|---|----------------------|----------------|----------|--------------------------------------|-------------|
| | Form PTO-1449 | (Modified) | JAN + 8 2002 | U.S. I | Department of Commerce ent and Trademark Office | Aily. Docket 28341/6 | | يا. | Serial No. 0 9/721,8 7 | 70 |
| | INFOR | маті | ON DISCL | SURF ST | CATEMENT | Applicant Lowery | et al. | / | 0/650 | , 97 |
| 6 | - 10 | WINT I | (Use several sheets | , | | Filing Date | 8/1 oer 24, | | Group #5 | |
| \$EP | 2 4 2004 | | **** | | 313 | | | | HOAL | 品 |
| ATEM | TRANSPAR | | | U.S. PAT | ENT DOCUME | NTS | | _ | ÉNI | |
| | *Examiner Initials | | Document Number | Issue Date | Name | C | Class | Subclass | Filing 15 | ie K |
| | MAN | A1 | 5,585,277 | 12/17/96 | Bowie, et al. | (| 136 | 418 | 8 | |
| | MAN | A2 | 5.859.188 | 1/12/99 | Geary, et al. | 5 | -30 | 329 | | |

| | | | F | OREIGN PA | FENT DOCU | MENTS | | | , |
|------------|-----------------------|----|--------------------|---------------------|-----------|-------|----------|------|----------|
| | | | | | | | ٠. | Trai | nslation |
| ` | *Examiner Initials | | Document Number | Publication Date | Country | Class | Subclass | Yes | No |
| Ш | Ment | B1 | WO 97/09433 | 3/13/97 | PCT | | | | |
| \searrow | MSM | B2 | WO 97/48976 | 12/24/97 | PCT | | | | |

| | | | OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.) |
|---|-------|----|---|
| 2 | HATTA | C1 | Altschul, et al., "Gapped BLAST and PSI-BLAST: A New Generation of Protein Database Search Programs," Nucl. Acids Res. 25:3389-3402 (1997). |
| | Mary | C2 | Aujame, et al., "High-Affinity Human Antibodies by Phage Display," Human Antibodies 8:155-168 (1997). |
| 9 | Har | C3 | Baindur, et al., "Selective Fluorescent Ligands for Pharmacological Receptors," Drug Dev. Res. 33:373-398 (1994). |
| 2 | Jusin | C4 | Bargmann, C., "Neurobiology of the Caenorhabditis elegans Genome," Science 282:2028-2032 (1998). |

| EXAMINER | MG Storan | la | DATE CONSIDERED | tot1710= 4 | 1/16 |
|----------|-----------|----|-----------------|------------|------|
| | | | | | 1 |

| OIPA | | SHEET 2 of _ |
|---|---------------------------------------|-----------------------|
| Form PTO-1449 (Modified) U.S. Department of Commerce Patent and Trademark Office | Ally. Docket No. 28341/6223.N | Serial No. 09/721-870 |
| 2000 | Applicant Lowery et al. | 10/60046) |
| INFORMATION DISCLOSURE STATEMENT (Use several sheets if necessary) | Filing Date 8/28/0) November 24, 2009 | Ploup 163 |

| | Z Z () |
|----------|---|
| 0 | OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.) |
| C5 | Birgul, et al., "Reverse physiology in Drosophila: Identification of a North Allatostatin-like Neuropeptide and its Cognate Receptor Structurally Receptor the Mammalian Somatostatin/galanin/opioid Receptor Family," EMBO Journal 18:5892-5900 (1999). |
| Epart C6 | Bohm, et al., "Regulatory Mechanisms That Modulate Signalling by G-protein-coupled Receptors," Biochemistry Journal 322:1-18 (1997). |
| 2 C7 | Bosse, et al., "Development of Nonseparation Binding and Functional Assays for G Protein-Coupled Receptors for High Throughput Screening: Pharmacological Characterization of the Immobilized CCR5 Receptor on FlashPlate®," J. Biomol. Screening 3:285-292 (1998). |
| C8 | Boulton, et al., "ERKs: A Family of Protein-Serine/Threonine Kinases That Are Activated and Tyrosine Phosphorylated in Response to Insulin and NGF," Cell 65:663-675 (1991). |
| C9 | Bruggemann, et al., "Production of Human Antibody Repertoires in Transgenic Mice," Current Opinions in Biotechnology 8:455-458 (1997). |
| Rust C10 | Bruggemann, et al., "Strategies for Expressing Human Antibody Repertoires in Transgenic Mice," Immunol. Today 17:391-397 (1996). |
| C11 | Cane, et al., "Harnessing the Biosynthetic Code Combinations, Permutations, and Mutations," Science 282:63-68 (1998). |
| C12 | Cobbold, et al., "AEQUORIN MEASUREMENTS OF CYTOPLASMIC FREE CALCIUM," in CELLULAR CALCIUM: A PRACTICAL APPROACH, (McCormack, et al., eds. Oxford, IRL Press 1991). |
| 2 C13 | Cox, et al., "Cloning Characterization, and Expression of a G-Protein-Coupled Receptor from Lymnaea stagnalis and Identification of a Leucokinin-Like Peptide, PSFHSWSamide, as Its Endogenous Ligand," J. Neurosci. 17:1197-1205 (1997). |
| C14 | Day, et al., "Parasitic Peptides! The Structure and Function of Neuropeptides in Parasitic Worms," Peptides 20:999-1019 (1999). |

| | EXAMINER | Mayoron | DATE CONSIDERED 1011910 2 | 6/19/06 |
|--|----------|---------|---------------------------|---------|
|--|----------|---------|---------------------------|---------|

| | | OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.) |
|------|-------------|---|
| NA | C15 | de Bono, et al., "Natural Variation in a Neuropeptide Y Receptor Hospolog Modifies Social Behavior and Food Response in C. elegans," Cell 94:679-689 (1998). |
| ZWA | C16 | Dooley, et al., Binding and In Vitro Activities of Peptides with High Affinity for the Nociceptin/Orphanin FQ Receptor, ORL1," J. Pharm. & Exp. Therap. 283:735-741 (1997). |
| 2 M | C17 | Dunlop, et al., Characterization of 5-HT _{IA} Receptor Functional Coupling in Cells Expressing the Human 5-HT _{IA} Receptor as Assessed with the Cytosensor Microphysiometer," J. of Pharmacol. and Toxicol. Methods 40:47-55 (1998). |
| WAR | C18 | Fields, et al., "A Novel Genetic System to Detect Protein-protein Interactions," Nature 340:245-246 (1989). |
| 2 mg | <u>C</u> 19 | Fields, et al., "The Two-hybrid System: an Assay for Protein-protein Interactions," Trends in Genetics 10:286-292 (1994). |
| 1100 | C20 | Frandsen, et al., "A Simple Ultrasensitive Method for the Assay of Cyclic AMP and Cyclic GMP in Tissues," Life Sciences 18:529-541 (1976). |
| M | C21 | Geary, et al., "Pharmacology of FMRFamide-Related Peptides in Helminths," Annals N. Y. Acad. Sci. 897:212-227 (1999). |
| W | C22 | Geary, et al., "The Pharmacology of FMRFamide-related Neuropeptides in Nematodes: New Opportunities for Rational Anthelmintic Discovery?," International Journal of Parasitology 25:1273-1280 (1995). |
| 2 | C23 | George, et al., "Evaluation of a CRE-Directed Luciferase Reporter Gene Assay as an Alternative to Measuring cAMP Accumulation," J. Biomol. Screening 2:235-240 (1997). |
| W IW | C24 | Gerhardt, et al., "Functional Characteristics of Heterologously Expressed 5-HT Receptors," Eur. J. Pharmacol. 334:1-23 (1997). |
| Mary | C25 | Guerrero, "Cloning of a cDNA from Stable Fly which Encodes a Protein with Homology to a <i>Drosophila</i> Receptor for Tachykinin-like Peptides," F.D., <i>Annals N.Y. Acad. Sci.</i> 814:310-311 (1997). |

| EXAMINER | Ma Boroa | | DATE CONSIDERED | HOHRTOZ | 6//9/06 |
|----------|----------|---|-----------------|---------|---------|
| | | , | | | II |

| | | <u> </u> |
|---------|-------------|--|
| | | OTHER DOCUMENTS (Including Author, Title, Date, Pertinant Pages, ec.] |
| man s | Ç26 | Hill, "Trends in Development of High-throughput Screening Technologies for Rapid Discovery of Novel Drugs," Curr. Opin. In Drug Disc. & Dev. 1:92-97 (1998). |
| | C 27 | Hodgson, "Receptor Screening and the Search for New Pharmaceuticals," Bio/Technology 10:973-980 (1992). |
| CAP C | C28 | Holmes, et al., "Cloning and Transcriptional Expression of a Leucokinin-like Peptide Receptor from the Southern Cattle Tick, Boophilus microplus (Acari: Ixodidae)," Insect Mol. Biol. (2000 in press). |
| Par C | C 29 | Hoogenboom, "Designing and Optimizing Library Selection Strategies for Generating High-affinity Antibodies," TIBTECH 15:62-70 (1997). |
| Gar C | C30 | Jaquette, et al., "Temperature Sensitivity of Some Mutants of Lutropin/Choriogonadotropin Receptor," Endocrinology 138:85-91 (1997). |
| MAN | C31 | Jayawickreme, et al., "Gene Expression Systems in the Development of High- throughput Screens," Current Opinion in Biotechnology 8:629-634 (1997). |
| Way (| C32 | Kanterman, et al., "Transfected D ₂ Dopamine Receptors Mediate the Potentiation of Arachidonic Acid Release in Chinese Hamster Ovary Cells," Molecular Pharmacology 39:364-369 (1991). |
| Jam o | C33 | Kowal, et al., "A [35S]GTPγS Binding Assessment of Metabotropic Glutamate Receptor Standards in Chinese Hamster Ovary Cell Lines Expressing the Human Metabotropic Receptor Subtypes 2 and 4," Neuropharmacology 37:179-187 (1998). |
| grand o | C34 | Kozak, et al., "An Analysis of 5'-noncoding Sequences from 699 Vertebrate Messenger RNAs," Nucl. Acids Res. 15:8125-8148 (1987). |
| 2 M | C35 | Kuntzweiler, et al., "Rapid Assessment of Ligand Actions with Nicotinic Acetylcholine Receptors Using Calcium Dynamics and FLIPR," Drug Development Research 44:14-20 (1998). |
| Jan (| C36 | Lajiness, et al., "D2 Dopamine Receptor Stimulation of Mitogenesis in Transfected Chinese Hamster Ovary Cells: Relationship to Dopamine Stimulation of Tyrosine Phosphorylations," Journal of Pharmacology and Experimental Therapeutics 267:1573-1581 (1993). |

| EXAMINER | Ma Moron 2 | DATE CONSIDERED HOLKING |
|----------|------------|-------------------------|
| | | |

(Use several sheets if necessary)

| | | CEN C |
|------|------|--|
| | | OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages etc.) |
| war | C37 | Lenz, et al., "Molecular Cloning and Genomic Organization of a Novel Ecceptor from Drosophila melanogaster Structurally Related to Mammalian Galanin Reseptors," Biochem. Biophys. Res. Comm. 269:91-96 (2000). |
| EMA | C38 | Li, et al., "Neuropeptide Gene Families in the Nematode Caenorhabditis elegans," Annals N. Y. Acad. Sci. 897:239-252 (1999). |
| MAN | C39 | Li, et al., "Cloning, Functional Expression, and Developmental Regulation of a Neuropeptide Y Receptor from <i>Drosophila melanogaster</i> ," J. Biol. Chem. 267:9-12 (1992). |
| 221 | C40 | Myers, P.L., "Will Combinatorial Chemistry Deliver Real Medicines?," Current Opinion in Biotechnology 8:701-707 (1997). |
| MAN | C41 | Nakayama, et al., "Microplate Assays for High-Throughput Screening," Drug Disc. & Dev. 1:85-91 (1998). |
| 244 | C42 | Pausch, M.H., "G-protein-coupled Receptors in Saccharomyces cerevisiae: High-throughput Screening Assays for Drug Discovery," Trends in Biotech. 15:487-494 (1997). |
| | C43 | Radar, et al., "Phage Display of Combinatorial Antibody Libraries," Current Opinions in Biotechnology 8:503-508 (1997). |
| | .C44 | Rogers, "Light on High-throughput Screening: Fluorescence-based Assay Technologies," Drug Disc. Today 2:156-160 (1997). |
| Man | C45 | Schroeder, et al., "FLIPR: A New Instrument for Accurate, High Throughput Optical Screening," J. Biomol. Screening 1:75-80 (1996). |
| MAN | C46 | Seifert, et al., "Reconstitution of β_2 -adrenoceptor-GTP-binding-protein Interaction in Sf9 Cells High Coupling Efficiency in a B_2 -adrenoceptor- G_{sa} Fusion Protein," Eur. J. Biochem. 255:369-382 (1998). |
| MAN | C47 | Stables, et al., "A Bioluminescent Assay for Agonist Activity at Potentially Any G- Protein-Coupled Receptor," Analytical Biochemistry 252:115-126 (1997). |
| Mari | C48 | Stratowa, et al., "Use of a Luciferase Reporter System for Characterizing G-protein- linked Receptors," Current Opinion in Biotechnology 6:574-581 (1995). |

| EXAMINER | Mg Moran | LE | DATE CONSIDERED LOTISTICE 6/19/06 |
|------------|--------------------------------------|---------------------------------------|--|
| *EXAMINER: | Initial if reference considered, whe | ther or not citati Include copy of | ion is in conformance with MPEP 609; Draw line through f this form with next communication to applicant. |

| | | OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Page etc.) |
|-------|-----|---|
| NAN | C49 | Strosberg, et al., "Functional Expression of Receptors in Microorganisms? Trends Pharm. Science 13:95-98 (1992). |
| 12 A | C50 | Strosberg, "Structure/function Relationship of Proteins Belonging to the Family of Receptors Coupled to GTP-binding Proteins," Eur. Journal of Biochemistry 196:1-10 (1991). |
| PAR S | C51 | Sutherlands, et al., "Some Aspects of the Biological Role of Adenosine 3',5'-monophosphate, (Cyclic AMP)," Circulation 37:279 (1968). |
| NA V | C52 | Sweetnam, et al., "The Role of Receptor Binding in Drug D," J. Nat. Prod. 56:441-455 (1993). |
| MAN | C53 | Tensen, et al., "The Lymnaea Cardioexcitatory Peptide (LyCEP) Receptor: A G-Protein-Coupled Receptor for a Novel Member of the RFamide Neuropeptide Family," J. Neurosci. 18:9812-9821 (1998). |
| WAY | C54 | Thompson, et al., "CLUSTAL W: Improving the Sensitivity of Progressive Multiple Sequence Alignment Through Sequence Weighting, Position-specific Gap Penalties and Weight Matrix Choice," Nucl. Acids Res. 22:4673-4680 (1994). |
| | C55 | Thompson, et al., "Prospects for Rational Approaches to Anthelmintic Discovery," Parasitology 113:S217-S238 (1996). |
| MA | C56 | Vanden Broeck, "G-Protein-Coupled Receptors in Insect Cells," Intl. Rev. Cytol. 164:189-268 (1996). |
| MART | C57 | Wieboldt, et al., "Immunoaffinity Ultrafiltration with Ion Spray HPLC/MS for Screening Small-Molecule Libraries," Anal. Chem. 69:1683-1691 (1997) |
| W | C58 | Williams, "Receptor Binding in the Drug Discovery Process," Med. Res. Review 11:147-184 (1991). |
| M | C59 | Wilson, et al., "Orphan G-protein-coupled Receptors: The Next Generation of Drug Targets?," Brit. Journal Pharmacol. 125:1387-1392 (1998). |
| MA | C60 | PCT/US/00/32225, International Search Report Dated August 28, 2001. |

| EXAMINER | Mayorar | W | DATE CONSIDERED (18/02 6/19/60 |
|------------|------------------------------------|--|---|
| *EXAMINER: | Initial if reference considered, w | hether or not citati d. Include copy of | ion is in conformance with MPEP 609; Draw line through of this form with next communication to applicant. |

| | SHEET <u>7</u> of | _7 |
|---|--|----|
| Form PTO-1449 (Modified) U.S. Department of Commerce Patent and Trademark Office | Atty. Docket No. Serial No. 28341/6223.N Serial No. 09#721,870 | |
| INFORMATION DISCLASURE STATEMENT | Applicant Lowery et al. | |
| INFORMATION DISCLASSURE STATEMENT (Use several sheets if necessary) | Filing Date 8/28/0 7 Fil Grow 1/6 P | |
| | -O db | |

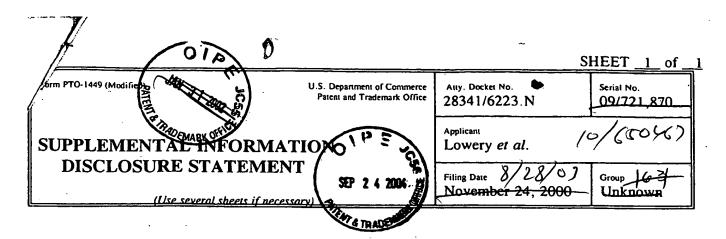
| | | OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Page etc.) |
|-------|-----|--|
| į | C61 | Cox, et al., "Cloning, Characterization, and Expression of a G-Protein-Coupled Receptor from Lymnaea stagnalis and Identification of a Leucokinin-Like Protein, PSHFHSWSamide, as Its Endogenous Ligands," J. of Neuro. 17:1197-1205 (1997). |
| Spron | C62 | Lee, et al., "Cloning and Expression of a G Protein-Linked Acetylcholine Receptor from Caenorhabditis elegans," J. Neurochem. 72:58-65 (1999). |

EXAMINER

MG Storan

DATE CONSIDERED

10/18/02 6/19/00



| | OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.) |
|----------|--|
| (May 263 | Murphy, et al., "From DNA to Drugs: The Orphan G-protein Coupled Receptors," Cur. Opin. in Drug Disc. Dev. 1:192-199 (1998). |
| C64 | Probst, et al., "Sequence Alignment of the G-Protein Coupled Receptors Superfamily," DNA Cell Biol. 11:1-20 (1992). |

RECEIVED

FEB 0'4 2002

TECH CENTER 1600/2900

EXAMINER

Ma Moran

DATE CONSIDERED

HIRTO 2 6/19/6

Notice of Reference Scited

Application/Control No.

09/721,870

10/6504

Applicant(s)/Patent Grades
Researchmation
LOWERY ET AL.

Examiner

Marintia A. Moran

Art Unit

Page 1 of 1

| | U. | э. | ۲, | ٩I | EN | , , | JŲ | CU | ME | N | 12 |
|---|----|----|----|----|----|-----|----|----|----|---|----|
| _ | | | | _ | | | | | | - | |

| T | | Document Number Country Code-Number-Kind Code | Date MM-YYYY | Name · | Classification |
|-----|---|---|-----------------|--------|----------------|
| T | Α | US- | | | |
| 1 | В | US- | | | |
| T | С | US- | | | |
| | D | US- | | | |
| | E | US- | | | |
| | F | US- | | | |
| | G | US- | | | |
| | н | US- | | | , |
| | 1 | US- | | | |
| .] | J | US- | | | |
| | к | US- | | | |
| •] | L | US- | | | |
| | М | US- | | | |

FOREIGN PATENT DOCUMENTS

| • | Document Number Country Code-Number-Kind Code | Date MM-YYYY | Country | Name | Classification |
|---|---|-----------------|---------|------|----------------|
| N | | | | · | |
| 0 | | | | | |
| Р | | | | | |
| a | | | | | |
| R | | | | | |
| s | | | | · | |
| T | | | | | |

NON-PATENT DOCUMENTS

| 7 | | Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages) |
|-----|---|---|
| 9/ | Ü | GARDNER, A. NCBI accession number T19340. 10/15/1999. |
| / - | ٧ | |
| | w | |
| | x | |

copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
tes in MM-YYYY format are publication dates. Classifications may be US or foreign.

3. Patent and Trademark Office *O-892 (Rev. 01-2001)

Notice of References Cited

() | 9 | 0 6

Part of Paper No. 10